**HOMEWORK ANSWERS:**

**p. 72 #13**

Summary Stats:

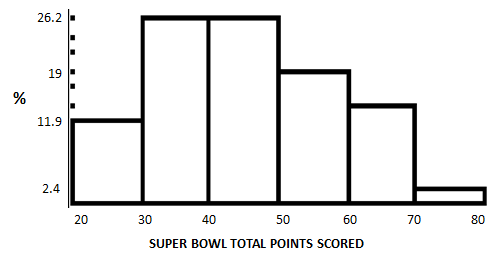
45.33 s = 13.59

min = 21 Q1 = 37

Med = 45 Q3 = 55

Max = 75 IQR = 18

Histogram:



Test for outliers:

LF = 37 – (1.5\*18) = 10

UF = 55 + (1.5\*18) = 82 Normal data = (10, 82)

All of the data is between the Lower and Upper Fences (calculated above), therefore there are no outliers.

**#25**

1. Adding an upper outlier (like the bosses 2 million salary) would increase the mean (make it higher than it should have been), but the median would remain the same as it would have been if the correct salary was entered.
2. Adding an upper outlier would increase the standard deviation, increase the range, but the IQR would remain the same (as it would have been if the correct value was entered). The IQR remains the same since it is calculated using the quartiles, which are medians.

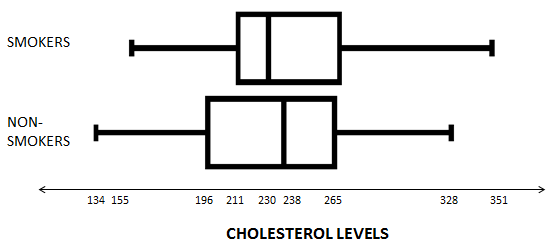
**#29**

Data: {1200, 700, 400, 400, 400, 400, 400, 400, 500, 500, 500, 500}

1. Mean = $525 Median = $450
2. Only 2 employees earn more than the mean (average) salary. There are 13 employees total. Therefore only 15.4% earn more than the average.
3. The median. It a better measure of the center of the salaries. The mean is pulled higher by the outlier (1200), therefore making it a deceiving measure of center.
4. Since we chose the median, we should also report the IQR and the range. The median & IQR go together.

**p. 100 #32**

Parallel Boxplots:



Summary Stats- NON-SMOKERS

233.06

s = 47.68

min = 134

Q1 = 196

Med = 238

Q3 = 265

Max = 328

IQR = 69

Summary Stats- SMOKERS

237.98

s = 38.54

min = 155

Q1 = 211

Med = 230

Q3 = 267

Max = 351

IQR = 56